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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
09/944,909	08/31/2001	Irene Spitsberg	13DV13713	3892

31316 7590 08/19/2003
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EXAMINER

MEEKS, TIMOTHY HOWARD

ART UNIT	PAPER NUMBER
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1762

A

DATE MAILED: 08/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --***Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b)

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 18-22 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-17 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) 1-22 are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 31 August 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____

- 4) Interview Summary (PTO-413) Paper No(s) _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-17, drawn to a method, classified in class 427, subclass 252.
- II. Claims 18-22, drawn to an article, classified in class 428, subclass 469.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product could be made by a process wherein the bond coat is deposited with the average grain boundary displacement rather than processing the deposited bond coat to have this displacement.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation between Examiner McNeil and Greg Garmong on August 1, 2002 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-17. Affirmation of this election must be made by applicant in replying to this Office action. Claims 18-22 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-5 and 9-17 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. application 09/944,711 in view of Burns et al. (6,042,898). Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims differ only in the use of YSZ species for the TBC layer and concentration of yttria therein. However, because Burns discloses use of YSZ TBC with the claimed yttria concentrations to be conventional TBC layers (col. 4, lines 54-60), use of the claimed TBC's would have been obvious.

Claims 1-17 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. application 09/944,706 in view of Burns et al. (6,042,898). Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims differ only in the use of YSZ species for the TBC layer and concentration of yttria therein. However, because Burns discloses use of YSZ TBC with the claimed yttria concentrations to be conventional TBC layers (col. 4, lines 54-60), use of the claimed TBC's would have been obvious.

Claims 1-17 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-28 of U.S. application 09/944,705 in view of Burns et al. (6,042,898). Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims differ only in the use of YSZ species for the TBC layer and concentration of yttria therein. However, because Burns

discloses use of YSZ TBC with the claimed yttria concentrations to be conventional TBC layers (col. 4, lines 54-60), use of the claimed TBC's would have been obvious.

Claims 1-8 and 12-17 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-21 of U.S. Patent No. 6,340,500 in view of Burns et al. (6,042,898). Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims differ only in the use of YSZ species for the TBC layer and concentration of yttria therein. However, because Burns discloses use of YSZ TBC with the claimed yttria concentrations to be conventional TBC layers (col. 4, lines 54-60), use of the claimed TBC's would have been obvious.

Claims 1-5 and 9-17 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-22 of U.S. Patent No. 6,482,469 in view of Burns et al. (6,042,898). Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims differ only in the use of YSZ species for the TBC layer and concentration of yttria therein. However, because Burns discloses use of YSZ TBC with the claimed yttria concentrations to be conventional TBC layers (col. 4, lines 54-60), use of the claimed TBC's would have been obvious.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 9-15, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Spitzberg (6,482,469).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

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Spitzberg discloses the claimed process at col. 4, lines 10-15, 30-45, and 50-53, col. 5, lines 1-5 and 42-55, col. 6, lines 30-40, and col. 7, lines 20-25. Please note that the 3% endpoint in the range of yttria concentrations in the YSZ is anticipatory.

Claims 1-7, 13, 15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Burns et al. (6,042,898).

The claimed process is disclosed at col. 2, lines 25-35, col. 2, line 65 to col. 3, line 5, col. 3, lines 25-32, col. 4, lines 36-64, and Example 1. Please note that the 3% endpoint in the range of yttria concentrations in the YSZ is anticipatory.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 16 is rejected under 35 U.S.C. 103(a) as being obvious over Spitzberg (6,482,469).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference

under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

The range of yttria concentrations disclosed in Spitzberg overlaps the range of claim 16. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 USPQ 549.

Claims 1-8 and 13-17 are rejected under 35 U.S.C. 103(a) as being obvious over Spitzberg (6,340,500) in view of Burns.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter

disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131, or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Spitzberg discloses the claimed process in the claims with the exception that use of YSZ having the claimed range of yttria is not explicitly disclosed as the TBC material. However, because Burns discloses that YSZ stabilized by 3 to 25 wt% yttria is a preferred TBC for turbine blades (col. 4, lines 40-60), it would have been obvious to use YSZ with yttria concentrations in the claimed range as the TBC of Spitzberg as these TBC's are preferred and therefore would be expected to provide an operable and preferred TBC layer.

Claims 8, 12, 14, and 16 are rejected under 35 U.S.C. 103(a) as being obvious over Burns.

The relevant portions of Burns are cited above. With respect to claims 8 and 14, Burns does not explicitly disclose the peening intensity or particular grain boundary displacement but does disclose that the peening is performed to close porosity or leaders that develop during deposition thereof (col. 3, lines 28-30). Therefore, the intensity of the peening and

commensurate achieved boundary displacement are result effective parameters and adjusting these parameters to values in the claimed ranges through routine experimentation for optimization depending on the porosity of the as deposited bond coat would have been obvious absent evidence showing a criticality for using the claimed range of intensities. With respect to claim 12, Burns discloses a desirability for a non porous surface and peening after deposition to achieve that. Clearly peening as the coating builds up would be an obvious way in which to achieve the desired non-porous film. With respect to claim 16, the range of yttria concentrations overlaps. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 USPQ 549.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being obvious over Warnes et al. (6,472,018) in view of Burns.

Warnes discloses a process as claimed wherein grain boundary ridges of the bondcoat are reduced by pretreatment such as electropolishing or vapor honing prior to depositing a TBC layer thereon (abstract, col. 1, lines 15-20 and 35-40, col. 3, lines 30-52, col. 4, line 65 to col. 5, line 55, col. 7, lines 60-65) with the exception that Warnes is silent as to the composition of the TBC layer. However, because Burns discloses that YSZ stabilized by 3 to 25 wt% yttria is a preferred TBC for turbine blades (col. 4, lines 40-60), it would have been obvious to use YSZ with yttria concentrations in the claimed range as the TBC of Warnes as these TBC's are preferred and therefore would be expected to provide an operable and preferred TBC layer. With

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respect to claims requiring peening. Burns discloses the effectiveness of this method for closing porosity in the bondcoat and therefore its use to reduce grain boundary ridges would have been obvious. With respect to claims 8 and 14, the art does not explicitly disclose the peening intensity or particular grain boundary displacement but does disclose that the peening is performed to close porosity or leaders that develop during deposition thereof (col. 3, lines 28-30). Therefore, the intensity of the peening and commensurate achieved boundary displacement are result effective parameters and adjusting these parameters to values in the claimed ranges through routine experimentation for optimization depending on the porosity of the as deposited bond coat would have been obvious absent evidence showing a criticality for using the claimed range of intensities. With respect to claim 12, the art discloses a desirability for a non porous surface and peening or polishing after deposition to achieve that. Clearly peening or polishing as the coating builds up would be an obvious way in which to achieve the desired non-porous film. With respect to claim 16, the range of yttria concentrations overlaps. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 USPQ 549.

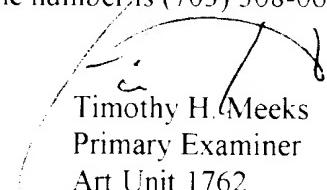
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy H. Meeks whose telephone number is (703) 308-3816. The examiner can normally be reached on Mon., Tues., Thurs.(6-6:30), Fri.(6:30-10:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (703) 308-2333. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Timothy H. Meeks
Primary Examiner
Art Unit 1762

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May 15, 2003